

**What is claimed is:**

1. An apparatus for exposing a photosensitive material, said photosensitive material having a light receiving surface and being exposed by radiation impinging on said light receiving surface, said apparatus comprising:
  - a substantively transparent substrate having a substantially planar light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar light emitting surface;
  - an Organic Light Emitting Diode (OLED) structure, said structure comprising at least one elongated array of individually addressable Organic Light Emitting Diode (OLED) elements, said Organic Light Emitting Diode (OLED) structure being deposited onto and in effective light transmission relation to the light receiving surface of said substrate;
  - wherein said OLED elements emit light over a broad range of wavelengths, any said OLED element in said at least one array has a characteristic surface dimension which is substantially the same for all OLED elements in the array and from which an OLED center point can be defined; and

at least one of a plurality of elongated arrays of color filter elements, said color filter elements selectively transmitting radiation in a distinct range of wavelengths, having a substantially planar color filter light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar color filter light emitting surface, any color filter element in the array has a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a center point can be defined, said color filter being formed from at least one color filter material, said at least one color filter material to form said at least one elongated color filter array being deposited onto and in effective light transmission relation to the light emitting surface of said substrate; and

wherein the color filter center points for any said color filter array being substantially collinear and aligned with the respective OLED center points for the OLED array located in effective light transmission relation to that color filter array.

2. The apparatus of Claim 1 further comprising:

a plurality of driver control circuits for selectively controlling the energizing of said Organic Light Emitting Diode (OLED) elements; and

means of electrically connecting selected ones of said individually addressable light emitting elements in said OLED structure to said selected ones of said driver control circuits.

3. The apparatus of Claim 2 wherein said at least one elongated color filter array is comprised of at least one of a plurality of triplets of color filters, and each element in each said triplet being capable of transmitting radiation in a distinct wavelength range different from the distinct wavelength range of the other two color filters in the same triplet.

4. The apparatus of Claim 3 wherein the color filter material is an imageable material.

5. The apparatus of Claim 3 wherein the color filter material is a colorant.

6. The apparatus of Claim 2 comprising at least one of a plurality of triplets of said elongated arrays of individually addressable Organic Light Emitting Diode (OLED) elements and said elongated arrays of color filter elements, each OLED array in the triplet in effective light transmission relation to the light receiving surface of one color filter array in the triplet thereby constituting an OLED - Color filter array set, each set in the triplet being aligned in substantially parallel spaced relation with respect to each other set in the triplet, each color filter array in each triplet having elements that are capable of transmitting radiation in a distinct

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wavelength range different from the distinct wavelength range of the other two arrays in the triplet, each triplet being aligned in substantially parallel spaced relation with respect to any other triplet.

7. The apparatus of Claim 6 wherein the color filter material is an imageable material.

8. The apparatus of Claim 6 wherein the color filter material is a colorant.

9. The apparatus of any of Claims 1 or 3-8 wherein the planar light emitting surface of said at least one color filter array is oppositely spaced apart at a given distance from and substantively parallel to the light receiving surface of said photosensitive material, the color filter elements in any of the color filter arrays are spaced apart by a given spacing between centers of the color filters, and the radiation emanating from any color filter in any said array and impinging on said light receiving surface of said photosensitive material defines a pixel area on the light receiving surface of said photosensitive material, said pixel area having a characteristic pixel dimension, and wherein said distance between the planar light emitting surface of the color filter array and the light receiving surface of photosensitive material, the distance between the light receiving surface of said substrate and the light emitting surface of said substrate, said spacing between centers of the color filters, and said characteristic surface dimension of the color filters being

jointly selected so that, at a given pixel area, said pixel area corresponding to a given color filter element in a given color filter array, the exposure of said photosensitive material due to the light intensity from the elements of the given array which are adjacent to said given color filter element and from said given color filter element, is optimized.

10. The apparatus in any of Claims 3-8 wherein every said color filter element further comprises a region substantially adjoining the entire periphery of said color filter element, and said region substantively absorbing radiation in all three distinct wavelength ranges, each said distinct wavelength range being associated with a color filter in a said triplet.

11. The apparatus of any of Claims 10 wherein the planar light emitting surface of said at least one color filter array is oppositely spaced apart at a given distance from and substantively parallel to the light receiving surface of said photosensitive material, the color filter elements in any of the color filter arrays are spaced apart by a given spacing between centers of the color filters, and the radiation emanating from any color filter in any said array and impinging on said light receiving surface of said photosensitive material defines a pixel area on the light receiving surface of said photosensitive material, said pixel area having a characteristic pixel dimension, and wherein said distance between the planar light emitting surface of the substrate and the light receiving surface of photosensitive material, the distance between the light receiving surface of said substrate and the

light emitting surface of said substrate, said spacing between centers of the color filters, and said characteristic surface dimension of the color filters are jointly selected so that, at a given pixel area, said pixel area corresponding to a given color filter element in a given color filter array, the exposure of said photosensitive material due to the light intensity from the elements of the given array which are adjacent to said given color filter element and from said given color filter element, is optimized.

12. An apparatus for exposing a photosensitive material, said photosensitive material having a light receiving surface and being exposed by radiation impinging on said light receiving surface, said apparatus comprising:

a substantively transparent substrate having a substantially planar light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar light emitting surface;

at least one elongated array of color filter elements, said color filter elements selectively transmitting radiation in a distinct range of wavelengths, having a substantially planar color filter light receiving surface oppositely spaced apart from and substantively parallel to substantially planar color filter light emitting surface, any color filter element in the array has a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a center point can be defined, said color filter being formed

from at least one color filter material, said at least one color filter material to form said at least one elongated color filter array being deposited onto and in effective light transmission relation to the light receiving surface of said substrate;

at least one elongated array of individually addressable Organic Light Emitting Diode (OLED) elements, said elements emitting light over a broad range of wavelengths, any OLED element in said array has a characteristic surface dimension which is substantially the same for all OLED elements in the array and from which an OLED center point can be defined, said at least one OLED array being deposited onto and in effective light transmission relation to the light receiving surface of said at least one color filter array, the OLED center points for any said OLED array being substantially collinear and aligned with the respective color filter center points for the color filter array located in effective light transmission relation to that OLED array.

13. The apparatus of Claim 12 further comprising:

a plurality of driver control circuits for selectively controlling the energizing of said Organic Light Emitting Diode (OLED) elements; and

means of electrically connecting selected ones of said individually addressable light emitting elements in said OLED structure to said selected ones of said driver control circuits:

14. The apparatus of Claim 13 wherein said at least one color filter array is comprised of a plurality of triplets of color filters, and each element in each said triplet being capable of transmitting radiation in a distinct wavelength range different from the other two elements in the same triplet.

15. The apparatus of Claim 14 wherein the color filter material is an imageable material.

16. The apparatus of Claim 14 wherein the color filter material is a colorant.

17. The apparatus of Claim 13 comprising at least one of a plurality of triplets of said elongated arrays of individually addressable Organic Light Emitting Diode (OLED) elements and said elongated arrays of color filters, each OLED array in the triplet in effective light transmission relation to the light receiving surface of one color filter array in the triplet thereby constituting an OLED color filter array set, each set in the triplet being aligned in substantially parallel spaced relation with respect to each other set in the triplet, each color filter array in each triplet being capable of transmitting radiation in a distinct wavelength range different from the



distinct wavelength range of the other two arrays in the triplet, each triplet being aligned in substantially parallel spaced relation with respect to any other triplet.

18. The apparatus of Claim 17 wherein the color filter material is an imageable material.

19. The apparatus of Claim 17 wherein the color filter material is a colorant.

20. The apparatus of any of Claims 12 or 14-19 wherein the planar light emitting surface of said at least one color filter array is oppositely spaced apart at a given distance from and substantively parallel to the light receiving surface of said photosensitive material, the color filter elements in any of the color filter arrays are spaced apart by a given spacing between centers of the color filters, and the radiation emanating from any color filter in any said array and impinging on said light receiving surface of said photosensitive material defines a pixel area on the light receiving surface of said photosensitive material, said pixel area having a characteristic pixel dimension, and wherein said distance between the planar light emitting surface of the substrate and the light receiving surface of photosensitive material, the distance between the light receiving surface of said substrate and the light emitting surface of said substrate, said spacing between centers of the color filters, and said characteristic surface dimension of the color filters are jointly selected so that, at a given pixel area, said pixel area corresponding to a given color filter

element in a given color filter array, the exposure of said photosensitive material due to the light intensity from the elements of the given array which are adjacent to said given color filter element and from said given color filter element, is optimized.

21. The apparatus in any of Claims 14-19 wherein every said color filter element further comprises a region substantially adjoining the entire periphery of said color filter element, and said region substantively absorbing radiation in all three distinct wavelength ranges, each said distinct wavelength range being associated with a color filter in a said triplet.

22. The apparatus of Claim 21 wherein the planar light emitting surface of said at least one color filter array is oppositely spaced apart at a given distance from and substantively parallel to the light receiving surface of said photosensitive material, the color filter elements in any of the color filter arrays are spaced apart by a given spacing between centers of the color filters, and the radiation emanating from any color filter in any said array and impinging on said light receiving surface of said photosensitive material defines a pixel area on the light receiving surface of said photosensitive material, said pixel area having a characteristic pixel dimension, and wherein said distance between the planar light emitting surface of the substrate and the light receiving surface of photosensitive material, the distance between the light receiving surface of said substrate and the light emitting surface of said substrate, said spacing between centers of the color filters, and said characteristic surface dimension of the color filters are jointly selected so that, at a given pixel area, said pixel area

corresponding to a given color filter element in a given color filter array, the exposure of said photosensitive material due to the light intensity from the elements of the given array which are adjacent to said given color filter element and from said given color filter element, is optimized.

23. An apparatus for exposing a photosensitive material, said photosensitive material having a light receiving surface and being exposed by radiation impinging on said light receiving surface, said apparatus comprising:

a substrate having a substantially planar first surface oppositely spaced apart from a substantially planar second surface; and

an individually addressable Organic Light Emitting Diode (OLED) structure, said structure comprising at least one elongated array of individually addressable Organic Light Emitting Diode (OLED) elements, said Organic Light Emitting Diode (OLED) structure being deposited onto the first surface of said substrate; and

wherein said OLED elements emit light over a broad range of wavelengths, any said OLED element in said at least one array has a characteristic surface dimension which is substantially the same for all OLED elements in the array and from which an OLED center point can be defined; and

a substantively transparent layer deposited onto the OLED structure, said layer having a light receiving surface in effective light transmission relation to the OLED structure, said light receiving surface oppositely spaced apart from a light emitting surface; and

at least one of a plurality of elongated array of color filter elements, said color filter elements selectively transmitting radiation in a distinct range of wavelengths, having a substantially planar color filter light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar color filter light emitting surface, any color filter element in the array has a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a center point can be defined, said color filter being formed from at least one color filter material, said at least one color filter material to form said at least one elongated color filter array being deposited onto and in effective light transmission relation to the light emitting surface of said substantively transparent layer; and

wherein the color filter center points for any said color filter array being substantially collinear and aligned with the OLED center points for the OLED array located in effective light transmission relation to that color filter array.

24. The apparatus of Claim 23 further comprising:

a plurality of driver control circuits for selectively controlling the energizing of said Organic Light Emitting Diode (OLED) elements; and

means of electrically connecting selected ones of said individually addressable light emitting elements in said OLED structure to said selected ones of said driver control circuits.

25. The apparatus of Claim 24 wherein said at least one color filter array is comprised of at least one of a plurality of triplets of color filters, and each element in each said triplet being capable of transmitting radiation in a distinct wavelength range different from the distinct wavelength range of the other two color filters in the same triplet.

26. The apparatus of Claim 25 wherein said OLED structure is an actively addressable OLED structure.

27. The apparatus of Claim 25 wherein said OLED structure is a passively addressable OLED structure.

28. The apparatus of Claim 25 wherein the color filter material is an imageable material.

29. The apparatus of Claim 25 wherein the color filter material is a colorant.

30. The apparatus of Claim 24 comprising at least one of a plurality of triplets of said elongated arrays of individually addressable Organic Light Emitting Diode (OLED) elements and said elongated arrays of color filters, each OLED array in the triplet in effective light transmission relation to the light receiving surface of one color filter array in the triplet thereby constituting OLED color filter array set, each set in the triplet being aligned in substantially parallel spaced relation with respect to each other set in the triplet, each color filter array in each triplet having elements that are capable of transmitting radiation in a distinct wavelength range different from the distinct wavelength range of the other two arrays in the triplet, each triplet being aligned in substantially parallel spaced relation with respect to any other triplet.

31. The apparatus of Claim 30 wherein said OLED structure is an actively addressable OLED structure.

32. The apparatus of Claim 30 wherein said OLED structure is a passively addressable OLED structure.

33. The apparatus of Claim 30 wherein the color filter material is an imageable material.

34. The apparatus of Claim 30 wherein the color filter material is a colorant.

35. The apparatus of any of Claims 23 or 25-34 wherein the planar light emitting surface of said at least one color filter array is oppositely spaced apart at a given distance from and substantively parallel to the light receiving surface of said photosensitive material, the color filter elements in any of the color filter arrays are spaced apart by a given spacing between centers of the color filters, and the radiation emanating from any color filter in any said array and impinging on said light receiving surface of said photosensitive material defines a pixel area on the light receiving surface of said photosensitive material, said pixel area having a characteristic pixel dimension, and wherein said distance between the planar light emitting surface of the color filter array and the light receiving surface of photosensitive material, the distance between the light receiving surface of said substantively transparent layer and the light emitting surface of said substantively transparent layer, said spacing between centers of the color filters, and said characteristic surface dimension of the color filters are jointly selected so that, at a given pixel area, said pixel area corresponding to a given color filter element in a given color filter array, the exposure of said photosensitive material due to the light intensity from the elements of the given array which are adjacent to said given color filter element and from said given color filter element, is optimized.

36. The apparatus in any of Claims 25-34 wherein every said color filter element further comprises a region substantially adjoining the entire periphery of said color filter element, and said region substantively absorbing radiation in all three distinct wavelength ranges, each said distinct wavelength range being associated with a color filter in a said triplet.

37. The apparatus of Claim 36 wherein the planar light emitting surface of said at least one color filter array is oppositely spaced apart at a given distance from and substantively parallel to the light receiving surface of said photosensitive material, the color filter elements in any of the color filter arrays are spaced apart by a given spacing between centers of the color filters, and the radiation emanating from any color filter in any said array and impinging on said light receiving surface of said photosensitive material defines a pixel area on the light receiving surface of said photosensitive material, said pixel area having a characteristic pixel dimension, said distance between the planar light emitting surface of the color filter array and the light receiving surface of photosensitive material, the distance between the light receiving surface of said substantively transparent layer and the light emitting surface of said substantively transparent layer, said spacing between centers of the color filters, and said characteristic surface dimension of the color filters being jointly selected so that, at a given pixel area, said pixel area corresponding to a given color filter element in a given color filter array, the exposure of said photosensitive material due to the light intensity from the elements of the given array which are adjacent to said given color filter element and from said given color filter element, is optimized.



38. An apparatus for exposing a photosensitive material, said photosensitive material having a light receiving surface and being exposed by radiation impinging on said light receiving surface, said apparatus comprising:

a substrate having a substantially planar first surface oppositely spaced apart from a substantially planar second surface; and

an individually addressable Organic Light Emitting Diode (OLED) structure, said structure comprising at least one elongated array of individually addressable Organic Light Emitting Diode (OLED) elements, said Organic Light Emitting Diode (OLED) structure being deposited onto the first surface of said substrate; and

wherein said OLED elements emit light over a broad range of wavelengths, any said OLED element in said at least one array has a characteristic surface dimension which is substantially the same for all

OLED elements in the array and from which an OLED center point can be defined; and

at least one of a plurality of elongated array of color filter elements, said color filter elements selectively transmitting radiation in a distinct range of wavelengths, having a substantially planar color filter light

receiving surface oppositely spaced apart from and substantively parallel to a substantially planar color filter light emitting surface, any color filter element in the array has a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a center point can be defined, said color filter being formed from at least one color filter material, said at least one color filter material to form said at least one elongated color filter array being deposited onto and in effective light transmission relation to the OLED structure; and wherein the color filter center points for any said color filter array being substantially collinear and aligned with the OLED center points for the OLED array located in effective light transmission relation to that color filter array; and

a substantively transparent layer deposited onto the at least one of a plurality of elongated array of color filter elements, said layer having a light receiving surface in effective light transmission relation to said color filter arrays, said light receiving surface oppositely spaced apart from a light emitting surface.

39. The apparatus of Claim 38 further comprising:

a plurality of driver control circuits for selectively controlling the energizing of said Organic Light Emitting Diode (OLED) elements; and

means of electrically connecting selected ones of said individually addressable light emitting elements in said OLED structure to said selected ones of said driver control circuits.

40. The apparatus of Claim 39 wherein said at least one color filter array is comprised of at least one of a plurality of triplets of color filters, and each element in each said triplet being capable of transmitting radiation in a distinct wavelength range different from the distinct wavelength range of the other two color filters in the same triplet.

41. The apparatus of Claim 40 wherein said OLED structure is an actively addressable OLED structure.

42. The apparatus of Claim 40 wherein said OLED structure is a passively addressable OLED structure.

43. The apparatus of Claim 40 wherein the color filter material is an imageable material.

44. The apparatus of Claim 40 wherein the color filter material is a colorant.

45. The apparatus of Claim 39 comprising at least one of a plurality of triplets of said elongated arrays of individually addressable Organic Light Emitting Diode (OLED) elements and said elongated arrays of color filters, each OLED array in the triplet in effective light transmission relation to the light receiving surface of one color filter array in the triplet thereby constituting an OLED color filter array set, each set in the triplet being aligned in substantially parallel spaced relation with respect to each other set in the triplet, each color filter array in each triplet having elements that are capable of transmitting radiation in a distinct wavelength range different from the distinct wavelength range of the other two arrays in the triplet, each triplet being aligned in substantially parallel spaced relation with respect to any other triplet.

46. The apparatus of Claim 45 wherein said OLED structure is an actively addressable OLED structure.

47. The apparatus of Claim 45 wherein said OLED structure is a passively addressable OLED structure.

48. The apparatus of Claim 45 wherein the color filter material is an imageable material.

49. The apparatus of Claim 45 wherein the color filter material is a colorant.

50. The apparatus of any of Claims 38 or 40-49 wherein the planar light emitting surface of said at least one color filter array is oppositely spaced apart at a given distance from and substantively parallel to the light receiving surface of said photosensitive material, the color filter elements in any of the color filter arrays are spaced apart by a given spacing between centers of the color filters, and the radiation emanating from any color filter in any said array and impinging on said light receiving surface of said photosensitive material defines a pixel area on the light receiving surface of said photosensitive material, said pixel area having a characteristic pixel dimension, and wherein said distance between the planar light emitting surface of the color filter array and the light receiving surface of said photosensitive material, the distance between the light receiving surface of said transparent layer and the light emitting surface of said transparent layer, said spacing between centers of the color filters, and said characteristic surface dimension of the color filters are jointly selected so that, at a given pixel area, said pixel area corresponding to a given color filter element in a given color filter array, the exposure of said photosensitive material due to the light intensity from the elements of the given array which are adjacent to said given color filter element and from said given color filter element, is optimized.

51. The apparatus in any of Claims 40-49 wherein every said color filter element further comprises a region substantially adjoining the entire periphery of said color filter element, and said region substantively absorbing radiation in all three

distinct wavelength ranges, each said distinct wavelength range being associated with a color filter in a said triplet.

52. The apparatus of Claim 51 wherein the planar light emitting surface of said at least one color filter array is oppositely spaced apart at a given distance from and substantively parallel to the light receiving surface of said photosensitive material, the color filter elements in any of the color filter arrays are spaced apart by a given spacing between centers of the color filters, and the radiation emanating from any color filter in any said array and impinging on said light receiving surface of said photosensitive material defines a pixel area on the light receiving surface of said photosensitive material, said pixel area having a characteristic pixel dimension, and wherein said distance between the planar light emitting surface of the color filter array and the light receiving surface of photosensitive material, the distance between the light receiving surface of said transparent layer and the light emitting surface of said transparent layer, said spacing between centers of the color filters, and said characteristic surface dimension of the color filters are jointly selected so that, at a given pixel area, said pixel area corresponding to a given color filter element in a given color filter array, the exposure of said photosensitive material due to the light intensity from the elements of the given array which are adjacent to said given color filter element and from said given color filter element, is optimized.

53. A method of exposing a photosensitive material, said material having a light receiving surface, utilizing a printhead, said printhead having a light emitting

surfaces, and said printhead comprising at least one of a plurality of triplets of elongated arrays sets, each array set in each triplet comprising an array of OLED emitting radiation over a broad range of frequencies and an array of color filter elements, said color filter array in the set having elements that are capable of transmitting radiation in a distinct wavelength range different from the distinct wavelength range of the other two color filter arrays in the triplet, each array set in the triplet is substantially parallel to every other array set in the triplet and has a characteristic distance from the center of the array to the center of the neighboring array set, said method comprising the steps of:

placing the printhead over the photosensitive material such that the light emitting surface of the printhead is oppositely spaced apart at a given distance from and substantively parallel to the light receiving surface of the photosensitive material; and

addressing and printing the elements of the arrays in all the triplets;  
then,

displacing the printhead relative to the photosensitive material by said characteristic distance in the direction perpendicular to both the distance between the printhead and the light receiving surface of the photosensitive material and the direction along the array so that the array in the triplet that emits in the second distinct wavelength range is

located substantively at the position previously occupied by the array which emits in the first distinct wavelength range; then,

addressing and printing the elements of the arrays in all the triplets; then

displacing the printhead relative to the photosensitive material by said characteristic distance in the direction perpendicular to both the distance between the printhead and the light receiving surface of the photosensitive material and the direction along the array so that the array in the triplet that emits in the third distinct wavelength range is located substantively at the position previously occupied by the array which emits in the second distinct wavelength range and initially occupied by the array which emits in the first distinct wavelength range; then,

addressing and printing the elements of the arrays in all the triplets.

54. A method of producing an integral Organic Light Emitting Diode (OLED) printhead having a color filter array comprising the steps of:



providing a substantially transparent substrate having a substantially planar color filter array supporting surface oppositely spaced apart from and substantially parallel to a substantially lower surface;

coating onto the color filter array supporting surface of the substrate an imageable material, said imageable material having a substantially planar light receiving surface oppositely spaced apart from and substantially parallel to a substantially planar bottom surface;

exposing the light receiving surface of the imageable material with at least one source of radiation, said at least one source of radiation emitting over at least one distinct range of wavelengths, where said exposure is performed so as to produce at least one elongated array of color filter elements, said color filter elements selectively transmitting radiation in a distinct color filter range of wavelengths, any color filter element in the array having a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a center point can be defined;

depositing onto said light receiving surface of the imageable material a substantially transparent conductor material;

patterning said conductor material so as to define at least one row of substantially transparent conductor material, wherein said at least one row of substantially transparent conductor material has a characteristic dimension transverse to the row direction and from which a center line can be defined, said center line in said at least one row being aligned with a line containing the color filter center points of the elements in said at least one color filter array;

disposing onto the patterned conductor, by means of deposition or by coating, a plurality of layers of organic materials, said organic materials comprising the organic components of an OLED, said materials selected so that said OLED emits light over a broad range of wavelengths;

depositing onto the organic layers a conductor layer and patterning said conductor layer into columns, said columns being substantively perpendicular to said rows of substantially transparent conductor material and passing through the color filter center points of the elements in said at least one color filter array;

coating a protective layer over the conductor layer and the OLED arrays.

55. A method of producing an integral Organic Light Emitting Diode (OLED) printhead having a color filter array comprising the steps of:

providing a substantively transparent substrate having a substantially planar light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar light emitting surface;

depositing onto said light receiving surface of the substantively transparent substrate a substantially transparent conductor material;

patterning said substantially transparent conductor material so as to define at least one row of substantially transparent conductor material, wherein said at least one row of substantially transparent conductor material has a characteristic dimension transverse to the row direction and from which a center line can be defined;

disposing onto the patterned conductor, by means of deposition or by coating, a plurality of layers of organic materials, said organic materials comprising the organic components of an OLED, said materials selected so that said OLED emits light over a broad range of wavelengths;

depositing onto the organic layers a conductor layer and patterning said conductor layer into columns, said columns being substantively perpendicular to said rows of substantially transparent conductor material;

coating a protective layer over the conductor layer and the OLED arrays;

coating onto the light emitting surface of said substrate an imageable material, said imageable material having a substantially planar imageable material light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar imageable material light emitting surface, said imageable material light receiving surface being in effective light transmission relation to the light emitting surface of said substrate;

exposing the light receiving surface of the imageable material with at least one source of radiation, said at least one source of radiation emitting over at least one distinct range of wavelengths, where said exposure is performed so as to produce at least one elongated array of color filter elements, said color filter elements selectively transmitting

radiation in a distinct color filter range of wavelengths, any color filter element in the array having a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a center point can be defined, wherein a line containing the at least one row of substantially transparent conductor material is substantially parallel to said at least one row of substantially transparent conductor material and the at least one row of substantially transparent conductor material being aligned with intersections of said at least one row of substantially transparent conductor material and said conductor columns.

56. A method of producing an integral Organic Light Emitting Diode (OLED) printhead having a color filter array comprising the steps:

providing a substrate having a substantially planar first surface oppositely spaced apart from and substantively parallel to a substantially planar second surface; and

depositing onto the first surface of said substrate an individually addressable Organic Light Emitting Diode (OLED) structure, said structure comprising at least one elongated array of individually addressable Organic Light Emitting Diode (OLED) elements , wherein

said OLED elements emit light over a broad range of wavelengths, any said OLED element in said at least one array has a characteristic surface dimension which is substantially the same for all OLED elements in the array and from which an OLED center point can be defined; and

depositing onto the OLED structure a substantively transparent layer, said layer having a light receiving surface in effective light transmission relation to the OLED structure, said light receiving surface oppositely spaced apart from a light emitting surface; and

depositing onto and in effective light transmission relation to the light emitting surface of said substantively transparent layer an imageable material, said imageable material having a substantially planar imageable material light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar imageable material light emitting surface, said imageable material light receiving surface being in effective light transmission relation to the light emitting surface of said substrate;

exposing the light emitting surface of the imageable material with at least one source of radiation, said at least one source of radiation emitting over at least one distinct range of wavelengths, where said

exposure is performed so as to produce at least one of a plurality of elongated array of color filter elements, said color filter elements selectively transmitting radiation in a distinct range of wavelengths, any color filter element in the array has a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a center point can be defined, each said center point being located at one said color filter surface and having an image point at the opposite color filter surface, said image point being located along a line perpendicular to the surface on which the center point is located, said line passing through the center point, said color filter being formed from at least one color filter material, and wherein the color filter center points for any said color filter array being substantially collinear with the OLED center points for the OLED array located in effective light transmission relation to that color filter array, said OLED center points being also simultaneously substantially collinear with the corresponding image points of said color filter center points.

57. The method of Claim 56 wherein said OLED structure deposited onto the first surface of said substrate is an actively addressable OLED structure.

58. The method of Claim 56 wherein said OLED structure deposited onto the first surface of said substrate is a passively addressable OLED structure.

59. A method of producing an integral Organic Light Emitting Diode (OLED) printhead having a color filter array comprising the steps:

providing a substrate having a substantially planar first surface oppositely spaced apart from and substantively parallel to a substantially planar second surface; and

depositing onto the first surface of said substrate an individually addressable Organic Light Emitting Diode (OLED) structure, said structure comprising at least one elongated array of individually addressable Organic Light Emitting Diode (OLED) elements, wherein said OLED elements emit light over a broad range of wavelengths, any said OLED element in said at least one array has a characteristic surface dimension which is substantially the same for all OLED elements in the array and from which an OLED center point can be defined; and

depositing onto and in effective light transmission relation to the OLED structure an imageable material, said imageable material having a substantially planar imageable material light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar imageable material light emitting surface, said



imageable material light receiving surface being in effective light transmission relation to the OLED structure;

exposing the light emitting surface of the imageable material with at least one source of radiation, said at least one source of radiation emitting over at least one distinct range of wavelengths, where said exposure is performed so as to produce at least one of a plurality of elongated array of color filter elements, said color filter elements selectively transmitting radiation in a distinct range of wavelengths, any color filter element in the array has a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a center point can be defined, each said center point being located at one said color filter surface and having an image point at the opposite color filter surface, said image point being located along a line perpendicular to the surface on which the center point is located, said line passing through the center point, wherein the color filter center points for any said color filter array being substantially collinear with the OLED center points for the OLED array located in effective light transmission relation to that color filter array, said OLED center points being also simultaneously substantially collinear with the corresponding image points of said color filter center points; and

depositing onto the at least one of a plurality of elongated array of color filter elements a substantively transparent layer, said layer having a light receiving surface in effective light transmission relation to said color filter arrays, said light receiving surface oppositely spaced apart from a light emitting surface.

60. The method of Claim 59 wherein said OLED structure deposited onto the first surface of said substrate is an actively addressable OLED structure.

61. The method of Claim 59 wherein said OLED structure deposited onto the first surface of said substrate is a passively addressable OLED structure.

62. A method of producing an integral Organic Light Emitting Diode (OLED) printhead having a color filter array comprising the steps of:

providing a substantively transparent substrate having a substantially planar color filter array supporting surface oppositely spaced apart from and substantively parallel to a substantially lower surface;

disposing onto the color filter array supporting surface of the substrate at least one elongated array of color filter elements, said color filter elements comprised of colorant and selectively transmitting radiation in a distinct color filter range of wavelengths, having a substantially

planar color filter light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar color filter light emitting surface, any color filter element in the array having a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a center point can be defined;

depositing onto said light receiving surface of the color filter array a substantially transparent conductor material;

patterning said conductor material so as to define at least one row of substantially transparent conductor material, wherein said at least one row of substantially transparent conductor material has a characteristic dimension transverse to the row direction and from which a center line can be defined, said center line in said at least one row being aligned with a line containing the color filter center points of the elements in said at least one color filter array;

disposing onto the patterned conductor, by means of deposition or by coating, a plurality of layers of organic materials, said organic materials comprising the organic components of an OLED, said materials selected so that said OLED emits light over a broad range of wavelengths;

depositing onto the organic layers a conductor layer and patterning said conductor layer into columns, said columns being substantively perpendicular to said rows of substantially transparent conductor material and passing through the color filter center points of the elements in said at least one color filter array;

coating a protective layer over the conductor layer and the OLED arrays.

63. A method of producing an integral Organic Light Emitting Diode (OLED) printhead having a color filter array comprising the steps of:

providing a substantively transparent substrate having a substantially planar light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar light emitting surface;

depositing onto said light receiving surface of the substantively transparent substrate a substantially transparent conductor material;

patterning said substantially transparent conductor material so as to define at least one row of substantially transparent conductor material, wherein said at least one row of substantially transparent conductor

material has a characteristic dimension transverse to the row direction and from which a center line can be defined;

disposing onto the patterned conductor, by means of deposition or by coating, a plurality of layers of organic materials, said organic materials comprising the organic components of an OLED, said materials selected so that said OLED emits light over a broad range of wavelengths;

depositing onto the organic layers a conductor layer and patterning said conductor layer into columns, said columns being substantively perpendicular to said rows of substantially transparent conductor material;

coating a protective layer over the conductor layer and the OLED arrays;

disposing onto the light emitting surface of said substrate at least one elongated array of color filter elements, said color filter elements comprised of colorant and selectively transmitting radiation in a distinct color filter range of wavelengths, any color filter element in the array having a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a

center point can be defined, and any color filter element in the array having a substantially planar color filter light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar color filter light emitting surface, wherein a line containing the at least one row of substantially transparent conductor material is substantially parallel to said at least one row of substantially transparent conductor material and the at least one row of substantially transparent conductor material being aligned with intersections of said at least one row of substantially transparent conductor material and said conductor columns.

64. A method of producing an integral Organic Light Emitting Diode (OLED) printhead having a color filter array comprising the steps:

providing a substrate having a substantially planar first surface oppositely spaced apart from and substantively parallel to a substantially planar second surface; and

depositing onto the first surface of said substrate an individually addressable Organic Light Emitting Diode (OLED) structure, said structure comprising at least one elongated array of individually addressable Organic Light Emitting Diode (OLED) elements, wherein said OLED elements emit light over a broad range of wavelengths,

any said OLED element in said at least one array has a characteristic surface dimension which is substantially the same for all OLED elements in the array and from which an OLED center point can be defined; and

depositing onto the OLED structure a substantively transparent layer, said layer having a light receiving surface in effective light transmission relation to the OLED structure, said light receiving surface oppositely spaced apart from a light emitting surface; and

disposing onto and in effective light transmission relation to the light emitting surface of said substantively transparent layer at least one elongated array of color filter elements, said color filter elements comprised of colorant and selectively transmitting radiation in a distinct color filter range of wavelengths, any color filter element in the array having a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a center point can be defined, any color filter element in the array having a substantially planar color filter light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar color filter light emitting surface, each said center point being located at one said color filter surface and having an image point at the opposite color filter surface, said image point being located along a

line perpendicular to the surface on which the center point is located ,  
said line passing through the center point, said color filter being  
formed from at least one color filter material, and

wherein the color filter center points for any said color filter array  
being substantially collinear with the OLED center points for the  
OLED array located in effective light transmission relation to that  
color filter array , said OLED center points being also simultaneously  
substantially collinear with the corresponding image points of said  
color filter center points.

65. The method of Claim 64 wherein said OLED structure deposited onto  
the first surface of said substrate is an actively addressable OLED structure.

66. The method of Claim 64 wherein said OLED structure deposited onto  
the first surface of said substrate is a passively addressable OLED structure.

67. A method of producing an integral Organic Light Emitting Diode  
(OLED) printhead having a color filter array comprising the steps:

providing a substrate having a substantially planar first surface  
oppositely spaced apart from and substantively parallel to a  
substantially planar second surface; and



depositing onto the first surface of said substrate an individually addressable Organic Light Emitting Diode (OLED) structure, said structure comprising at least one elongated array of individually addressable Organic Light Emitting Diode (OLED) elements, wherein said OLED elements emit light over a broad range of wavelengths, any said OLED element in said at least one array has a characteristic surface dimension which is substantially the same for all OLED elements in the array and from which an OLED center point can be defined; and

disposing onto and in effective light transmission relation to the OLED structure at least one elongated array of color filter elements, said color filter elements comprised of colorant and selectively transmitting radiation in a distinct color filter range of wavelengths, any color filter element in the array has a characteristic surface dimension which is substantially the same for all color filter elements in the array and from which a center point can be defined, any color filter element in the array having a substantially planar color filter light receiving surface oppositely spaced apart from and substantively parallel to a substantially planar color filter light emitting surface, each said center point being located at one said color filter surface and having an image point at the opposite color filter surface, said image point being located along a line perpendicular to the surface on which the center point is

located, said line passing through the center point, wherein the color filter center points for any said color filter array being substantially collinear with the OLED center points for the OLED array located in effective light transmission relation to that color filter array, said OLED center points being also simultaneously substantially collinear with the corresponding image points of said color filter center points; and

depositing onto the at least one of a plurality of elongated array of color filter elements a substantively transparent layer, said layer having a light receiving surface in effective light transmission relation to said color filter arrays, said light receiving surface oppositely spaced apart from a light emitting surface.

68. The method of Claim 59 wherein said OLED structure deposited onto the first surface of said substrate is an actively addressable OLED structure.

69. The method of Claim 59 wherein said OLED structure deposited onto the first surface of said substrate is a passively addressable OLED structure.